1992

G92-1107 Elm Leaf Beetle

David L. Keith
University of Nebraska--Lincoln, dkeith1@unl.edu

Frederick P. Baxendale
University of Nebraska - Lincoln, fbaxendale1@unl.edu

James A. Kalisch
University of Nebraska - Lincoln, jkalisch1@unl.edu

G92-1107-A

NebGuide

Published by Cooperative Extension, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

Elm Leaf Beetle

History, identification, and indoor and outdoor control of the elm leaf beetle are discussed.

David L. Keith, Extension Entomologist
Frederick P. Baxendale, Extension Entomologist
James A. Kalisch, Extension Technologist

The elm leaf beetle is an imported pest, first found in the United States in 1834. Common throughout Nebraska, it is almost exclusively a pest of elms, including the American, Siberian and other varieties. Japanese Zelkova is also readily attacked. Adults (beetles) vary in color from yellow to olive green, and have a black stripe near the outside of each wing cover. They can be confused with other beetles of similar appearance (western corn rootworm, striped cucumber beetle), but they are distinctive in that they occur early in the season and have three dark spots on the body segment behind the head.

Elm leaf beetles are gregarious, congregating in the fall to seek a hibernation site. The site is often outdoors beneath piles of leaves or boards. Frequently beetles move into homes or animal dwellings, hiding beneath floor boards, in attics, between walls or in cracks and crawl spaces. During warm winter weather, beetles become active, making their presence noticeable to the homeowner. The beetles are completely harmless in homes, but may be a nuisance.

In spring, after beetles emerge from hibernation, they fly to elm trees, depositing yellow, lemon-shaped eggs in groups of 25 or more on the undersides of leaves. The presence of many eggs indicates a high probability of severe defoliation. Both larvae and adults skeletonize elm leaves, leaving nothing but the leaf veins if the attack is severe. Most trees will not be killed unless the defoliation is nearly complete for two or three consecutive years.

Two generations of spotted black and yellow larvae are produced each year in Nebraska. The first usually occurs from May to June and the second from July through August. When the larvae are mature (about three weeks after emerging from the egg) they move down to the base of the trunk where they transform to the pupa stage. Adults emerge one to two weeks later.

Control

In the home

Preventing invasion of elm leaf beetles into the home in the fall will forestall nuisance problems in the

winter. Migration from host trees to sheltered areas is gradual and may not be noticed. Seal all cracks and crevices that could allow entry, and make certain that window and vent screens are intact.

If elm leaf beetles enter the home, remove them with a vacuum cleaner. Beetle concentrations can be sprayed indoors with insecticide formulations containing pyrethrins, propoxur (Baygon), diazinon or chlorpyrifos (Dursban). Follow label instructions. Aerosol foggers or fumigators are appropriate for attics and crawl spaces. If possible, remove accumulations of dead beetles because they may attract carpet beetles and other secondary pests.

Outdoors

To minimize leaf injury to elms, apply an insecticide after eggs have hatched and while larvae are small. Thorough coverage is essential. High-pressure sprayers are necessary to obtain coverage in large trees. Insecticides suitable for controlling larvae on foliage include carbaryl (Sevin), chlorpyrifos (Dursban), fluvalinate (Mavrik) and acephate (Orthene). Where spray drift is a concern, or for a non-chemical alternative, apply an insecticidal soap, superior (horticultural) oil spray, or a product containing the insect bacterial pathogen *Bacillus thuringiensis* developed for leaf beetles (M-One, Trident, Leaf Beetle ATTACK).

Another opportunity to control elm leaf beetles occurs at the end of the first generation (late June) when full-grown larvae migrate to the bases of trees to pupate. Apply a residual insecticide (ex. Dursban) to the trunk and lower branches to the point of wetness to kill migrating larvae. Also, lay boards or pieces of carpet beneath the tree to attract larvae. Large numbers of larvae or yellow pupae that accumulate beneath can be treated with a contact insecticide.

Other options for control include injection of a systemic insecticide into the tree trunk, or pre-season application of systemic insecticide granules into the soil beneath the tree to prevent foliar injury. These procedures are best accomplished by a professional arborist or certified applicator.

File G1107 under: INSECTS AND PESTS
A-11, Ornamentals & Trees
Issued September 1992; 10,000 printed.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.